

International Journal of

CONTROL

Editor: A. G. J. MACFARLANE

Consultant Editor: A. T. FULLER

Editorial Board:

Sweden - - - -	Professor K. J. ÅSTRÖM
Netherlands - - -	Professor P. EYKHOFF
U.S.A. - - - -	Professor YU-CHI HO
U.S.A. - - - -	Professor R. E. KING
U.S.A. - - - -	Professor C. T. LEONDES
U.K. - - - -	Professor D. Q. MAYNE
Switzerland - - -	Professor PAUL PROFOS
U.K. - - - -	Professor H. H. ROSENBROCK
West Germany - -	Professor Dr.-Ing. M. THOMA
U.K. - - - -	Professor J. C. WEST
U.K. - - - -	Professor J. H. WESTCOTT

Volume XXII

July 1975 to December 1975

CONTENTS OF VOL. XXII (Nos. 1-6)

NUMBER 1—JULY

	Page
Multi person decision analysis in large-scale hierarchical systems— team decision theory. J. D. COLE and A. P. SAGE	1
Optimum energy conservation in a batch penicillin process. R. E. KING	29
Preservation of controllability under sampling. Y. BAR-NESS and G. LANGHOLZ	39
Solution of the discrete infinite-time, time-invariant regulator by the Euler equation. Y. BAR-NESS	49
Envelope curves to inverse Nyquist array diagrams. T. R. CROSSLEY	57
On the stochastic observability and controllability for non-linear systems. Y. SUNAHARA, S. AIHARA and K. KISHINO	65
Observability of decentralized discrete-time control systems. T. YOSHIKAWA and H. KOBAYASHI	83
Algorithm of finite number of iterations for the minimum fuel and minimum amplitude control problems. L. V. KOLEV	97
Minimum energy and maximum accuracy optimal control of linear stochastic systems. J. L. WILLEMS	103
Convergence properties of a method for state estimation in power systems. L. LJUNG and S. LINDAHL	113
Unattainability of certain pole positions in single-input systems with output feedback. H. SERAJI	119
Stability and the eigenvalues of $G(s)$. O. L. NWOKAH	125
Pole placement in output feedback control systems for minimum sensitivity to plant parameter variations. H. R. SIRISENA and S. S. CHOI ...	129
Stochastic exponential stability concepts and large-scale discrete systems. P. DIAMOND	141
Correspondence:	
Cyclicity of linear multivariable systems. B. PORTER and A. BRADSHAW	147

NUMBER 2—AUGUST

	Page
Design of dead-beat controllers and full-order observers for linear multivariable discrete-time plants. B. PORTER and A. BRADSHAW	149
Decoupling multivariable systems by optimal control techniques. G. HIRZINGER	157
On solution, stability and transformation of linear time-varying systems. M.-Y. WU, I. M. HOROWITZ and J. C. DENNISON	169
Optimal control synthesis of time-delay systems via dynamic programming. J. MISHRA and V. S. RAJAMANI	181
The solution of linear 'minimum peak amplitude' control problems by a dual space method. I. G. THOMSON and F. FALLSIDE	191
Optimal sensors' allocation strategies for a class of stochastic distributed systems. S. E. AIDAROUS, M. R. GEVERS and M. J. INSTALLÉ	197
Design of a zero-sensitive observer. T. MITA	215
Sensitivity analysis of the problem of economic dispatch of thermal power systems. T. S. DILLON, K. MORSZTYN and T. TUN	229
Dimensionality reduction in multivariable stochastic systems. V. HAGGAN and M. B. PRIESTLEY	249
Least squares model reduction using step response. T. F. EDGAR	261
Pole assignment using dynamic compensators with prespecified poles. H. SERAJI	271
Transfer function synthesis. M. R. JAVDAN	281
Properties of dynamical indices. G. E. HAYTON	289
Book reviews	295

NUMBER 3—SEPTEMBER

Design of sampled-data multivariable control systems using the inverse Nyquist array. T. A. S. IBRAHIM and N. MUNRO	297
Parameter adaptive control of multivariable systems. R. V. MONOPOLI and C. C. HSING	313
Optimal and sub-optimal relay control by state-variable transformation. E. P. RYAN	329
Signal aliasing in system identification. P. E. WELLSTEAD	363
Optimal low-order controllers for linear stochastic systems. M. SIDAR and B.-Z. KURTARAN	377
Output feedback optimization of multiple-input systems with assigned poles. M. C. MAKI and J. VAN DE VEGTE	389

	Page
On optimal approximation of high-order linear systems by low-order models. G. HIRZINGER and G. KREISSELMEIER	399
Techniques for initial condition estimation in linear systems. J. S. MEDITCH and G. H. HOSTETTER	409
A quantitative measure of observability for a linear system. M. HEALEY and D. J. MACKINNON	421
The optimal design of a discrete-time controller for a single-input, single-output system with time delays. J. R. BLAIR and G. W. T. WHITE ...	427
Book reviews	441

NUMBER 4—OCTOBER

Measurement designs to improve the computational efficiency of linear system state estimators. J. C. STAMM and R. PRIEMER	445
The stochastic observability for noisy non-linear stochastic systems. Y. SUNAHARA, S. AIHARA and M. SHIRAIWA	461
Structural aspects of stability in non-linear systems. Part I. A. ABD-ALI, G. FRADELLOS and F. J. EVANS	481
Structural aspects of stability in non-linear systems. Part II. A. ABD-ALI and F. J. EVANS	493
A unified theory of optimal multi-level control. M. R. JAVDAN	517
Novel development of Lyapunov stability of motion. L. T. GRUJIĆ ...	525
Localization of disturbances and output decomposition in decentralized linear multivariable systems. F. HAMANO and K. FURUTA	551
An algebraic proof of the maximum principle. M. G. STRINTZIS	563
Minimal-order observer-estimators for continuous-time linear systems. J. O'REILLY and M. M. NEWMANN	573
Correspondence:	
Reply to 'Comment on the paper "Simplification of z-transfer functions by continued fractions"'. Y.-P. SHIH and W.-T. WU ...	591

NUMBER 5—NOVEMBER

Stochastic optimal pointwise regulation control for linear discrete-time distributed parameter systems. J. K. WONG and A. C. SOUDACK	593
Stochastic suboptimal pointwise regulation control for linear discrete-time distributed parameter systems. J. K. WONG and A. C. SOUDACK	611

	Page
Minimal realization of transfer function matrices. A comparative study of different methods. N. K. SINHA	627
Synthesis of linear time-varying systems with plant uncertainty by means of integral transforms. I. HOROWITZ and H. RABBIE	641
The role of transmission zeros in linear multivariable regulators. B. A. FRANCIS and W. M. WONHAM	657
On the invertibility of linear multivariable systems. R. V. PATEL	683
The ripple minimization problems in sample data systems. Y. BAR-NESS	689
A note on the stability and eigenvalues of $G(s)$. N. RAMANI and D. P. ATHERTON	701
On the stochastic Rayleigh quotient estimation theory. H. T. DORRAH and S. T. NICHOLS	705
Homographic transformation for the simplification of discrete-time transfer functions by Padé approximation. S. C. CHUANG	721
Design of multivariable systems via polynomial equations. R. RUTMAN and Y. SHAMASH	729
A simple non-linear drum boiler model. K. J. ÅSTRÖM and K. EKLUND	739

NUMBER 6—DECEMBER

A design procedure for pole assignment using output feedback. T. TOPALOGLU and D. E. SEBORG	741
Two-stop procedure for time-suboptimal ucontrol. S. H. OH and R. LUUS	749
Dimensionality reduction in multivariable stochastic systems. Application to a chemical engineering plant. V. HAGGAN	763
Application of the singular control test to periodic control problems of a continuous distillation process. M. MATSUBARA, Y. NISHIMURA and N. WATANABE	773
Explicit solution to a class of neutral delay-differential equations. A. C. TSOI	787
Cyclicity and conversion to cyclicity. A. I. VARDULAKIS	801
System-theoretical approach to model reduction and system-order determination. S. FUJISHIGE, H. NAGAI and Y. SAWARAGI	807
Application of Monte Carlo method to optimal control for linear systems under measurement noise with Markov dependent statistical property. H. AKASHI, H. KUMAMOTO and K. NOSE	821

	Page
The development of computer algorithms for multivariable adaptive control. C. McCORKELL and B. H. SWANICK	837
Minimal realizations of transfer-function matrices by means of matrix continued fraction. L. S. SHIEH, Y. J. WEI and R. YATES	851
On the inversion of matrix Routh array. L. S. SHIEH	861
Explicit solution to a class of functional differential equations. A. C. TSOI	869
Optimization of weakly coupled subsystems by a two-level method. T. ISHIMATSU, A. MOHRI and M. TAKATA	877
A reachability criterion for linear time-invariant systems. E. FORNASINI and A. LEPSCHY	883
Subject index	889
Author index	893

